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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,799	12/02/2003	Yukoh Iwasaki	40030043-02	3346

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EXAMINER

KRAMSKAYA, MARINA

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,799

Applicant(s)

IWASAKI ET AL.

Examiner

Marina Kramskaya

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-7, & 9 is/are rejected.
- 7) ☒ Claim(s) 5 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/02/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al., US 6,069,484, in view of Sheffer, US 4,716,361.

Sobolewski discloses a capacitance measurement system (FIG. 2, column 1, lines 17-19), heaving a test head comprising:

a plurality of input/output terminals (see connection of **12** to **14'** in FIG. 2)
connected to a device under test (DUT) **14'**;
a source and measure unit (SMU) **10** supplying voltages or current;
a switching matrix **15** connected to the plurality of input/output terminals, source
and measure unit **10**.

Sobolewski does not disclose a capacitance measurement unit having an impedance measurement function.

Sheffer discloses a capacitance measurement unit having an impedance measurement function (column 1, lines 46-47).

Therefore, it would have been obvious to a person of ordinary skill in the art to include an impedance measurement function, as taught by Sheffer, in the measurement system of Sobolewski, in order to measure the total impedance of the DUT instead of just the capacitance (reactance).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al. in view of Sheffer, as applied to claim 1 above, and further in view of Persons, US 5,917,331.

Sobolewski, as modified, discloses the measurement system as applied to Claim 1 above.

Sobolewski does not disclose a test head controller for controlling said source and measure unit, said capacitance measurement unit, and said switching matrix.

Persons discloses the measurement system including a test head controller **101** for controlling said source (ABS., line 1) and measure unit **204**, said capacitance measurement unit, and said switching matrix (**208, 209, 210**).

Therefore, it would have been obvious to a person of ordinary skill in the art to include a controller, as taught by Persons, in the measurement system of Sobolewski as modified, in order to control the element of the test head.

5. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al. in view of Sheffer, as applied to claim 1 above, and further in view of Andeen et al., US 4,772,844.

As per Claim 3, Sobolewski, as modified, discloses the measurement system as applied to Claim 1 above.

Sobolewski does not disclose a calibration terminal for the capacitance measurement.

Andeen discloses a calibration terminal (ABS., lines 7-9) for capacitance measurement.

Therefore, it would have been obvious to a person of ordinary skill in the art to include a calibration terminal, as taught by Andeen, in the measurement system of Sobolewski, in order to obtain more precise capacitance measurements.

As per Claim 4, Sobolewski, as modified, discloses the measurement system as applied to Claim 1 above.

Sobolewski, as modified, does not disclose a capacitance measurement unit that transmits an absolute value and phase of impedance of said device under test to said test head controller.

Andeen discloses capacitance measurement unit that transmits an absolute value and phase of impedance of said device under test to said test head controller (ie. processor) (column 2, lines 23-24, 37-39).

Therefore, it would have been obvious to a person of ordinary skill in the art to measure the capacitance in terms of absolute value and phase and report to the controller, as taught by Andeen, in the measuring system of Sobolewski, in order to record the precise capacitance measurements.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al. in view of Sheffer, as applied to claim 1 above, and further in view of Kitayoshi, US 5,093,627.

Sobolewski, as modified, discloses the measurement system as applied to Claim 1 above.

Sobolewski, as modified, does not disclose a capacitance measurement unit that transmits a value of a real part and an imaginary part of an impedance of said device under test to said test head controller.

Kitayoshi, discloses a capacitance measurement unit (column 1, lines 6-8) that transmits a value of a real part and an imaginary part of an impedance of said device under test (column 2, lines 12-29) to said test head controller **240**.

Therefore, it would have been obvious to a person of ordinary skill in the art to transmit the measured impedance of the DUT as a real and an imaginary component to the controller, as taught by Kitayoshi, in the measurement system of Sobolewski as modified, in order to measure the impedance of the DUT with more precision.

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7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al. in view of Sheffer and Persons, as applied to claim 2 above, and further in view of Andeen.

Sobolewski, as modified, discloses the measurement system as applied to Claim 2 above.

Sobolewski, as modified, does not disclose a capacitance measurement unit that transmits an absolute value and phase of impedance of said device under test to said test head controller.

Andeen discloses capacitance measurement unit that transmits an absolute value and phase of impedance of said device under test to said test head controller (ie. processor) (column 2, lines 23-24, 37-39).

Therefore, it would have been obvious to a person of ordinary skill in the art to measure the capacitance in terms of absolute value and phase and report to the controller, as taught by Andeen, in the measuring system of Sobolewski, in order to record the precise capacitance measurements.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolewski et al. in view of Sheffer and Persons, as applied to claim 2 above, and further in view of Kitayoshi.

Sobolewski, as modified, discloses the measurement system as applied to Claim 2 above.

Sobolewski, as modified, does not disclose a capacitance measurement unit that transmits a value of a real part and an imaginary part of an impedance of said device under test to said test head controller.

Kitayoshi, discloses a capacitance measurement unit (column 1, lines 6-8) that transmits a value of a real part and an imaginary part of an impedance of said device under test (column 2, lines 12-29) to said test head controller **240**.

Therefore, it would have been obvious to a person of ordinary skill in the art to transmit the measured impedance of the DUT as a real and an imaginary component to the controller, as taught by Kitayoshi, in the measurement system of Sobolewski as modified, in order to measure the impedance of the DUT with more precision.

Allowable Subject Matter

9. Claims 5 & 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach the use of an external controller in conjunction with the internal test head controller in the field of capacitance measurement.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose a capacitance measurement

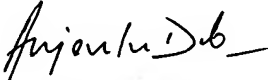
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system for a device under test: Sarma et al., US 6,788,074, Pisau et al., US 5,586,042, 6,675,339, Magil, US 6,774,643, and Prazeres da Costa et al., US 6,466,007.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ANJAN DEB
PRIMARY EXAMINER

MK

Marina Kramskaya
Examiner
Art Unit 2858

